

PATENT
Docket No.: FR000003
Customer No. 000024737

REMARKS

By this amendment, claims 1-4 and 6-11 have been amended. Claim 5 has been cancelled. Claims 1-4 and 6-11 remain in the application. This application has been carefully considered in connection with the Examiner's Action. Reconsideration, and allowance of the application, as amended, is respectfully requested.

Claim Objections

Claims 6-11 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. Applicant traverses this objection for at least the following reasons. By this amendment, claims 6-11 have been amended to no longer depend from any other multiple dependent claim. Accordingly, objection to claims 6-11 is now believed overcome. Claims 6-11 are believed allowable.

Information Disclosure Statement

Applicant acknowledges the examiner's consideration of the IDS filed April 26, 2001.

The Drawings

Applicant acknowledges the Examiner's remark that the drawings, filed January 6, 2001 are acceptable.

The Specification

The abstract was objected to because of the extra words "Figs.: 2A,2B" at the end of the abstract. Objection to the abstract is respectfully traversed for the following reason. The abstract has been amended to omit "Figs.: 2A,2B." Accordingly, objection to the abstract is now believed overcome.

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Priority

Applicant notes the Examiner's acknowledgment of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Rejection under 35 U.S.C. § 102

Claim 1

Claim 1 recites an image processing method for providing three-dimensional geometric modeling of the spine, using a biplanar image reconstruction, comprising: acquiring a first view (F) of a part of the spine; acquiring a second view (L) of the same part of the spine taken from a different angle around the longitudinal axis of the spine; matching the dimensions of the views (F,L) from two predetermined corresponding landmarks (P1, P2) on each view, performing a spline calculation for providing a smoothed axial line (FAC, LAC) on each view, the spline calculation including mathematical modeling of drawn piece-wise linear curves on a respective one of the first and second views, previously set by a control means of a drawing program, for supplying respective new digital smoothed curves, the new digital smoothed curves being constructed with interpolated values provided between points of the respective piece-wise linear curves, the new digital smoothed curves corresponding to a respective smoothed axial line (FAC, LAC) on each view; and deriving three-dimensional coordinates (z, x, y) of corresponding points (P) along the spine as a function of the smoothed axial lines (FAC, LAC).

Claims 1 is rejected under 35 U.S.C. § 102 as being clearly anticipated by Aubin et al., (hereinafter Aubin), "Morphometric evaluations of personalized 3D reconstructions and geometric models of the human spine", Medical & Biological Engineering & Computing, November 1997. Applicant traverses this rejection on the

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grounds that in light of the amendment to claim 1, this reference is defective in supporting a rejection under 35 U.S.C. § 102(b).

The PTO provides in MPEP §2131..."To anticipate a claim, the reference must teach every element of the claim...". Therefore, to sustain this rejection, the Aubin reference must contain all of the claimed elements of claim 1. However, the claimed image processing method for providing three-dimensional geometric modeling of the spine; using a biplanar image reconstruction, includes matching the dimensions of the views (F,L) from two predetermined corresponding landmarks (P1, P2) on each view; performing a spline calculation for providing a smoothed axial line (FAC, LAC) on each view, the spline calculation including mathematical modeling of drawn piece-wise linear curves on a respective one of the first and second views, previously set by a control means of a drawing program, for supplying respective new digital smoothed curves, the new digital smoothed curves being constructed with interpolated values provided between points of the respective piece-wise linear curves, the new digital smoothed curves corresponding to a respective smoothed axial line (FAC, LAC) on each view; and deriving three-dimensional coordinates (z, x, y) of corresponding points (P) along the spine as a function of the smoothed axial lines (FAC, LAC) is not shown or taught in the Aubin reference. Therefore, the rejection is unsupported by the art and should be withdrawn. Accordingly, claim 1 is now believed allowable.

Rejection under 35 U.S.C. § 103

Claims 2-5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Aubin as applied to claim 1 above, and further in view of Andre et al., (hereinafter Andre), " Approach of the smoothing of three-dimensional reconstructions of the human spine using dual Kriging interpolation", Medical & Biological Engineering & Computing, May 1996. With respect to claim 5, the same has been cancelled herein, rendering the

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rejection thereof moot. With respect to claims 2-4, this rejection is traversed for at least the reasons stated herein above with respect to claim 1. In addition, claims 2-4 depend from and add further limitation, in a patentable sense, to allowable claim 1. Accordingly, claims 2-4 are believed allowable.

Conclusion

It is clear from all of the foregoing that independent claim 1 is in condition for allowance. Dependent claims 2-4 and 6-11 depend from and further limit independent claim 1 and therefore are allowable as well.

The amendments herein are fully supported by the original specification and drawing, therefore, no new matter is introduced.

An early formal notice of allowance of claims 1-4 and 6-11 is requested.

Respectfully submitted,

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